REMARKS

Claims 1-20 are all the claims presently pending in the application. Claims 1, 12-13, and 20 are independent.

The amendments herein, if any, are made only to more particularly point out the invention for the Examiner. Applicant also notes that, notwithstanding any claim amendments herein or later during prosecution, Applicant's intent is to encompass equivalents of all claim elements.

Claims 1-5, 10, 12-15, 18, and 20 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by US Patent No. 5,912,705 to Saruwatari. Claims 6-8 and 17 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Saruwatari, further in view of US Patent No. 6,639,626 to Kubo et al. Claims 9, 11, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Saruwatari, further in view of US Patent Publication No. 2002/0058536 to Horii et al.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary embodiment of the claimed invention, as defined by, for example, independent claim 1 is directed to a portable communication apparatus that includes an image-capturing section for capturing an image depending on an operation of a shutter key and for sensing images in real-time, a display that includes a viewfinder display that displays the real-time sensed images and that includes a reference frame that indicates a predetermined optimal size of characters to achieve a predetermined success rate for character recognition for a character positioned within the reference frame, and a character recognition section for recognizing a character from a captured image.

Conventional portable communication devices have included image capturing devices and user-input devices, such as, for example, a number pad, but have not been able to input data using the image capturing device.

The present invention enables the input of data using an image capturing device.

Further, the present invention includes a display that includes a viewfinder display that displays the real-time sensed images and that includes a reference frame that indicates a

an optimal size for the character image for character recognition. In this manner, the present invention improves the performance of a character recognizer by ensuring that characters within a captured image are approximately of an optimum size.

II. THE PRIOR ART REJECTIONS

The Examiner considers that Saruwatari anticipates claims 1-5, 10, 12-15, 18, and 20, and, when modified by Kubo, renders obvious claims 6-8 and 17, and when further modified by Horii, renders obvious claims 9, 11, 18, and 19.

Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by Saruwatari and that the rejections of record fail to establish a *prima facie* obviousness rejection.

The Anticipation Rejection Based on Saruwatari

First, contrary to the characterization in the rejection currently of record, this reference is not directed to a portable communication apparatus, such as a cell phone, as required by the plain meaning of the claim language of the independent claims. Rather, as clearly explained in column 1, Saruwatari addresses a camera.

This distinction is significant, since, as explained at lines 5-8 of page 2 of the present disclosure, the problems related to small-sized portable equipment such as a cell phone are more demanding than character recognition in larger devices having larger size and higher resolution capability. The problems unique to small cell phones appear in the claimed features in various aspects, and the prior art evaluation based on Saruwatari does not provide proper recognition of these difficulties being addressed by the present invention.

Secondary references Kubo and Harii are not relied upon for purpose of, and so do not, overcome this fundamental deficiency of primary reference Saruwatari.

Hence, turning to the clear language of the claims, in Saruwatari there is no teaching or suggestion of: "A portable communication apparatus ....", as required by independent claim 1. The remaining independent claims have corresponding language.

Second, primary reference Saruwatari uses an entirely different concept from that of the claimed invention to designate a predefined region to be used for the character recognition function. The method in Saruwatari is based upon having an infrared diode

IRED (see lines 49-62 of column 3) so that the user's gaze can be determined and the user thereby designates a region of interest to be isolated for character recognition. As further explained beginning at line 50 of column 3, a visual axis detecting means 18a is used to determine the point at which the user is gazing. If the character recognizing switch 16 is ON, the user's visual axis information is detected, permitting the user to define the character recognition reference frame area, as explained beginning at line 45 of column 4.

In the first embodiment of Saruwatari, as demonstrated in Figure 4A and the description at line 63 of column 4 through line 31 of column 6, the user's gaze is used to define a region of interest 42 (e.g., SS1 of Fig. 4A) for purpose of defining a region of the image data to be separated out for purpose of performing character recognition in this smaller selected region (e.g., SS2), and then the recognized characters 42a are re-inserted into the image data (e.g., SS3).

In the second embodiment of Saruwatari, described beginning at line 32 of column 6, a zooming process (e.g., SS6 of Fig. 4B) is added for the region of interest 42.

The Examiner points to the description at line 35 of column 8, related to item 42b of Figure 4C (e.g., SS13 of Fig. 4C) of the third embodiment in Saruwatari. However, Applicant submits that these lines do not change the basic technique in Saruwatari of using the user's gaze to define the region of interest for character recognition, as clearly described at lines 28-33 of column 8. The box at the bottom of the display is not a predetermined region into which the user fits the characters to be recognized. Rather, this box is pre-designated as a display region for the characters, once they have been recognized.

The reason for this special display of the recognized characters in the third embodiment can be understood by recognizing Saruwatari's rationale for the character recognition feature is not related to the purpose described in the present invention (e.g., that of being able to enter telephone numbers into a memory of a cell phone, or to connect the cell phone to a URL, etc.).

Rather, as explained at lines 13-18 of column 6 of Saruwatari: "... *and as a result, for example, the visualization of unclear characters or the like which cannot be recognized by human eyes, by real-time processing, becomes possible, and this can be aid to sight. Also, such characters may be translated into other language and displayed when they are to be displayed again on the displaying means.*"

Therefore, contrary to the Examiner's characterization, it does not appear that the

predetermined area shown in Figure 4C is used in the manner described in the independent claims as a predetermined area defining a region to be isolated for character recognition. Rather, as clearly described in lines 33-36 of column 8, this region is an area used to display the characters once they have been recognized, an entirely different concept that does not satisfy the plain meaning of the claim language.

In contrast, the present invention provides an entirely different method of isolating an area of image data from the remainder of the image data, for purpose of improving character recognition for the image data in that isolated region. When a character recognition mode is entered, the present invention initially presents to the user a reference frame predetermined as having an optimal size to achieve a predetermined success rate for character recognition. The user will then move the image to best locate the characters to be recognized into this indicated reference frame. None of the prior art references currently of record teaches or suggests this technique.

Therefore, turning to the clear language of the claims, in Saruwatari there is no teaching or suggestion of: "... a display that includes a viewfinder display that displays said real-time sensed images and that includes a reference frame that indicates a predetermined optimal size of characters to achieve a predetermined success rate for character recognition for a character positioned within the reference frame ", as required by independent claim 1.

Third, relative to the Examiner's comment that "... *the remaining limitations of limitation b) are not given weight since functional limitation[s] are not given weight in an apparatus claim*", Applicant respectfully submits that the Examiner seems to be somewhat confused in this regard, as follows.

Presumably the Examiner is attempting to develop a position based upon the description in MPEP §2114: "*While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function.*" *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

In response, Applicant brings to the Examiner's attention that the claims at issue do indeed distinguish from the cited prior art Saruwatari, since the apparatus of the claimed invention includes a structural component (e.g., a display) having a characteristic that is defined functionally. This fact distinguishes from that of describing the entire apparatus in term of function. The Examiner seems to have confused this detail. In the claimed invention,

the functionality is used to describe a component versus describing the apparatus itself.

Applicant submits that the Examiner should consult the description in MPEP § 2173.05(g):

"*A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).*

A function limitation must be evaluated and considered, just like any other limitation of the claim for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step." (emphasis by Applicant)

Therefore, Applicant respectfully disagrees that the Examiner is entitled to simply disregard functional language related to a component within an apparatus, since even the MPEP itself clearly does not support this position.

The advantage of this limitation over the prior art methods is that character recognition is improved by having the user move the image to fill up, as much as possible, this pre-designated window within the display. This allows the limited resolution on a small image devices, such as used on a cell phone, to best utilize the image information for purpose of character recognition processing. Primary reference Saruwatari does not address a portable communication apparatus and, even if it is considered to confront this problem, the method of defining the area of image data to be isolated for purpose of character recognition is clearly based upon an entirely different mechanism than that of displaying a pre-determined window into which the user will move the portion of interest for character recognition.

Therefore, for any of the three reasons discussed above, Applicant submits that claims 1-5, 10, 12-15, 18, and 20 are not anticipated by Saruwatari and that all pending claims are clearly patent over Saruwatari.

The Rejection Based on Secondary Reference Kubo for Claims 6-8 and 17

Relative to the rejection for claims 6-8 and 17, wherein the Examiner points to lines 1-15 of column 1 of Kubo, Applicant respectfully points out that these lines in column 1 would appear to have nothing to do with a timer. Presumably the Examiner is attempting to

point to column 10, wherein is described the high-speed shutter prohibiting mode "... *for prohibiting a release of a shutter which shortens the predetermined exposure time*" (see lines 7-9 of column 10).

However, as explained at lines 19-22 of column 10:

"*If the high-speed shutter prohibition mode (1) is selected, a shutter release faster than, for example, 1/60 second is prohibited.*"

Applicant further believes that perhaps the Examiner's rationale can better be explained in view of the description beginning at line 60 of column 9:

"*As it has been explained, the image data obtained by the previous exposure (φ2) of the first CCD 303a is combined with the image data from the second CCD 303b. The exposure start timing of the second CCD 303b is delayed from the first CCD 303a by time Td+Td', as shown in FIG. 7. The period Td is maximum 1/15 seconds, and Td' is about 1/30 second which is a mechanical delay by the quick return mirror M1. Since a total delay of about 1/10 second occurs between the exposure of the first and second CCD 303a and 303b, this delay may cause problems if a quickly moving object is photographed.*"

Thus, Applicant speculates that the Examiner is attempting to connect this wording above of secondary reference Kubo to the claim language of, for example, claim 6, wherein is required that the timer delays operation for a predetermined period of time after the shutter key has been completed.

First, in response, it is noted that there is no suggestion that primary reference Saruwatari (for which the Examiner has the initial burden to provide a rationale to modify) has two CCDs or quick return mirror M1 causing the blurring of quickly moving objects. Without such nexus to this underlying problem as described in Kubo, the rationale of record makes no sense as a rationale to modify Saruwatari.

As explained at lines 14-22 of page 4 of the specification: "*Since the portable telephone device is usually small-sized and lightweight, clicking the shutter key causes its body to easily shake, so that the captured image becomes blurred, resulting in reduced character-recognition success rate. To prevent camera shake when clicking, an actual image capturing operation of the camera section 17 is activated a lapse of the predetermined time period after the shutter key has been clicked.*"

Therefore, contrary to the concern in Kubo over blurring of fast moving objects, this feature of the present invention is related to the small size of the portable communication

device (to which neither Saruwatari nor Kubo is directed), as used for attempting to take image data for character recognition and the user's inadvertent shaking of the small device after clicking the shutter key.

Therefore, Applicant respectfully submits that the Examiner has fail to provide a reasonable rationale to modify primary reference Saruwatari, so that the rejection currently of record for claims 6-8 and 17 fails to establish a *prima facie* obviousness rejection.

The Rejection Based on Harii for Claims 9, 11, 16, and 19

The Examiner rejects claims 9, 11, 16, and 19 as based upon the description in secondary reference Harii. Applicant respectfully submits that the rejection currently of record fails to provide a reasonable rationale to modify primary reference Saruwatari. Primary reference Saruwatari is related to a camera. Secondary reference Harii is related to a mobile phone. These are non-analogous arts and the rejection makes no attempt to provide a rationale to modify devices from these two different arts. Nor would secondary reference Harii overcome the deficiency identified above for primary reference Saruwatari.

Accordingly, Applicant submits that this rejection fails to establish a *prima facie* obviousness rejection for these claims.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that claims 1-20, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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Frederick E. Cooperrider
Registration No. 36,769

McGinn Intellectual Property Law Group, PLLC
8321 Old Courthouse Rd., Suite 200
Vienna, Virginia 22182
(703) 761-4100
Customer No. 21254